



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0766; Product Identifier 2019-NE-23-AD]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all General Electric Company (GE) CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5B1, CF34-8C5A2, CF34-8C5A3, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 turbofan engine models. This proposed AD was prompted by a predicted reduction in the cyclic life of the combustion chamber assembly aft flange, which could result in certain combustion chamber assemblies failing before reaching their published life limit. This proposed AD would require revisions to the Airworthiness Limitations Section (ALS) of the manufacturer's Instructions for Continued Airworthiness (ICA) and to the air carrier's approved Continued Airworthiness Maintenance Programs (CAMP) to incorporate initial and repetitive fluorescent penetrant inspections (FPIs) of the combustion chamber assembly. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC, 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH, 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0766; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: David Bethka, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section.

Include “Docket No. FAA-2019-0766; Product Identifier 2019-NE-23-AD” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact it receives about this NPRM.

Discussion

The FAA was notified by the manufacturer that they found a reduction in the cyclic life of the combustion chamber assembly when updating their life analysis. As a result, the manufacturer added a scheduled maintenance check. This condition, if not addressed, could result in combustion chamber assemblies failing before reaching their published life limit.

Related Service Information under 1 CFR part 51

The FAA reviewed GE CF34-8E Engine Manual Temporary Revision (TR) 05-0085, dated February 21, 2019; GE CF34-8C TR 05-0141, dated February 21, 2019; and GE CF34-8C TR 05-143, dated February 13, 2019. These TRs, differentiated by GE CF34-8 turbofan engine model, identify the combustion chamber assembly part number, life limit cycles, and new inspections.

The FAA also reviewed GE CF34-8E TR 05-0086, dated February 13, 2019, and GE CF34-8C TR 05-0142, dated February 13, 2019. These TRs, differentiated by GE CF34-8 turbofan engine model, describe new inspection threshold limits and re-inspection interval limits for the combustion chamber assembly.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

The FAA is proposing this AD because it evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require revisions to the ALS of the manufacturer's ICA and the air carrier's approved CAMP to incorporate initial and repetitive FPIs of the combustion chamber assembly.

Costs of Compliance

The FAA estimates that this proposed AD affects 1,216 GE CF34-8C turbofan engine models and 638 GE CF34-8E turbofan engine models installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

| Action | Labor cost | Parts cost | Cost per product | Cost on U.S. operators |
|--|--|-------------------|-------------------------|-------------------------------|
| Revise the ALS and CAMP (GE CF34-8C and CF34-8E) | 1 work-hour X \$85 per hour = \$85 | \$0 | \$85 | \$157,590 |
| FPI combustion chamber assembly (GE CF34-8C) | 6 work-hours X \$85 per hour = \$510 | \$0 | \$510 | \$620,160 |
| FPI combustion | 5 work-hours X \$85 per hour = | \$0 | \$425 | \$271,150 |

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national

government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a “significant regulatory action” under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

General Electric Company: Docket No. FAA-2019-0766; Product Identifier 2019-NE-23-AD.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all General Electric Company (GE) CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5B1, CF34-8C5A2, CF34-8C5A3, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 turbofan engine models, including engine models marked on engine data plate as CF34-8C5/B, CF34-8C5/M, CF34-8C5A1/B, CF34-8C5A1/M, CF34-8C5B1/B, CF34-8C5A2/B, and CF34-8C5A2/M.

(d) Subject

Joint Aircraft System Component (JASC) Code 7240, Turbine Engine Combustion Section.

(e) Unsafe Condition

This AD was prompted by a predicted reduction in the cyclic life of the combustion chamber assembly aft flange. The FAA is issuing this AD to prevent failure of the combustion chamber assembly. The unsafe condition, if not addressed, could result in combustion chamber assemblies failing before reaching their published life limit, uncontained release of the combustion chamber assembly, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 90 days after the effective date of this AD, revise the Airworthiness Limitations Section of the GE Instructions for Continued Airworthiness. For air carrier operations, within 90 days after the effective date of this AD, also revise the approved continuous airworthiness maintenance program. These revisions must incorporate the following requirements for fluorescent penetrant inspections (FPI) of the combustion chamber assembly aft flange.

(i) For a combustion chamber assembly with part number (P/N) 4145T11G08, P/N 4145T11G09, P/N 4180T27G01, or P/N 4180T27G03 installed on GE CF34-8E turbofan engine models, revise CF34-8E Engine Manual GEK112031 by:

(A) Replacing Table 801, Static Structures – Life Limits (“Table 801”), with the revised Table 801 in Task 05-11-05-200-801 of GE CF34-8E Engine Manual Temporary Revision (TR) 05-0085, dated February 21, 2019, and

(B) Adding Task 05-21-03-200-801 of GE CF34-8E TR 05-0086, dated February 13, 2019 (“GE CF34-8E TR 05-0086”).

(ii) For a combustion chamber assembly with P/N 4126T87G04, P/N 4126T87G05, P/N 4126T87G07, P/N 4126T87G08, P/N 4180T27G04, P/N 4923T82G01, or P/N 4923T82G02 installed on GE CF34-8C1 turbofan engine models, or with P/N 4145T11G08, P/N 4145T11G10, P/N 4180T27G02, P/N 4180T27G04, or P/N 4923T82G02 installed on GE CF34-8C5, CF34-8C5/M, CF34-8C5A1, CF34-8C5A1/M, CF34-8C5A2, CF34-8C5A2/M, CF34-8C5A3, or CF34-8C5B1 turbofan engine models, revise CF34-8C Engine Manual GEK105091 by:

(A) Replacing Table 801, (For -8C1) and Table 802 (For -8C5) Static Structures – Life Limits (“Table 801” and “Table 802”), with the revised Tables 801 and 802 in Task 05-11-05-200-801 of GE CF34-8C Engine Manual TR 05-0141, dated February 21, 2019, and

(B) Adding Task 05-21-03-200-801 of GE CF34-8C TR 05-0142, dated February 13, 2019 (“GE CF34-8C TR 05-0142”).

(iii) For a combustion chamber assembly with P/N 4145T11G08, P/N 4145T11G10, P/N 4180T27G02, P/N 4180T27G04, or P/N 4923T82G02 installed on GE CF34-8C5B1/B CF34-8C5/B, CF34-8C5A1/B, or CF34-8C5A2/B turbofan engine models (Business Jet), revise CF34-8C Engine Manual GEK105091 by:

(A) Replacing Table 801 (For /B -8C5 Models) Static Structures – Life Limits with the revised Table 801 in Task 05-11-25-200-801 of GE CF34-8C TR 05-143, dated February 13, 2019, and

(B) Adding Task 05-21-03-200-801 of GE CF34-8C TR 05-0142.

(2) For any combustion chamber assembly that has exceeded the initial inspection threshold (in cycles) specified in GE CF34-8E TR 05-0086 or GE CF34-8C TR 05-0142:

(i) Perform the initial FPI of the combustion chamber assembly aft flange within 2,200 cycles after the effective date of this AD in accordance with GE CF34-8E TR 05-0086 or GE CF34-8C TR 05-0142. Thereafter, perform repetitive FPIs in accordance with the intervals in GE CF34-8E TR 05-0086 or GE CF34-8C TR 05-0142.

(ii) If, during the FPI required by paragraph (g)(2)(i) of this AD, a crack is found in the combustion chamber assembly aft flange, disposition the assembly in accordance with paragraph 2.A. of GE CF34-8E TR 05-0086, or paragraph 2.A. of GE CF34-8C TR 05-0142.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (i)(1) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

(1) For more information about this AD, contact David Bethka, Aerospace Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7129; fax: 781-238-7199; email: david.bethka@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH, 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on November 25, 2019.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.

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